

ALTERATION DETECTION APPARATUS AND METHOD THEREOF

ABSTRACT OF THE DISCLOSURE

5 The present invention is directed to the detection of  
what part of an image alteration was added to by  
embedding an electronic watermark in the image. More  
particularly, embedding part 30 renders as pairs two each  
of DCT blocks of luminance component Y of an image,  
10 randomly selects, by using a random number, mutually  
corresponding DCT coefficients from each DCT block  
contained in the pairs, and manipulates so that the  
relationship among these DCT coefficients represent data  
according to a certain rule, and then embeds the data.  
15 If alteration is added to this image, the DCT  
coefficients contained in the pairs in the altered part  
do not observe the above rule and represent different  
values from the original data. Extraction part 40  
extracts data from the image, and makes decision by  
20 majority to estimate the initially embedded data to  
detect and display the pairs from which different data  
form the estimated data was extracted as those to which  
alteration was added.